

Application No.: 10/033436

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Romero teaches a backing, 12, for an abrasive article comprising a sheet like polymeric substrate, having a first major surface including a uniform or random pattern of non-abrasive raised and depressed areas, 20, 14. Romero also teaches an abrasive coating, 26, comprising silicon carbide abrasive particles and a binder make coating selected from acylate resins, and a size coating selected from a group consisting of phenolic resins, over the make coat, (col. 8, lines 18-67). Romero teaches all the limitations of the claims except for the backing having a filament stems having flattened distal ends integrally shaped in the second major surface. Law et al. teaches a backing with filament stems having flattened distal ends, (fig. 9). It would have been obvious to one having ordinary skill in the art at the time the invention was made, to provide the abrasive article of Romero with a backing having filament stems, as taught by Law et al., in order to enhance the backings attachment capabilities.

Claims 4 and 11 are rejected under 35 USC § 103(a) as being unpatentable over Romero in view of DeVoe, et al. (US Patent No. 5,922,784). In making this rejection, the Office Action indicates as follows:

Romero teaches all the limitations of the claims except for hook elements integrally shaped into the second major surface of the backing pad. DeVoe, et al. teaches hook elements, 203, integrally shaped into the second major surface of the backing pad. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the abrasive article of Romero with a hook elements integrally shaped into the second major surface of the backing pad, as taught by DeVoe, in order to enhance the backings attachment capabilities.

It is submitted that one skilled in the art would not combine Romero and Law, et al. because neither of these references teach the desirability of making the combination and each reference teaches a different backing from that defined in claim 1 of the present application.

Claim 1 of the present application defines a backing for an abrasive article comprising a sheet-like polymeric substrate having a first major surface including a pattern of non-abrasive raised areas and depressed areas for supporting an abrasive coating at least over said raised areas and an opposite second major surface including a plurality of shaped engaging elements that are

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one part of a two-part mechanical engagement system, the shaped engaging elements being selected from the group consisting of (a) filament stems having flattened or rounded distal ends integrally shaped into said second major surface and (b) hook elements integrally shaped into said second major surface.

The combination of references proposed by the Office Action of Romero in view of Law, et al. is unwarranted since it is made through the application of hindsight reasoning. There must be some suggestion in either of the references of the desirability for making the combination. Romero only shows "non-grinding side 16" illustrated in Fig. 2 of substrate 12 with a flat surface which does not include integrally shaped mechanical fastening elements in it. There is no suggestion of Romero altering this surface to provide the claimed structure defined in claim 1 of the present application. While Romero indicates that the first major surface of the base substrate could include raised areas with flattened distal ends, there is no suggestion of having the second major surface of the substrate to provide the type of structure claimed in the present application.

Law, et al. disclose conventional coated abrasive products that have a backing which does not include the non-abrasive shaped structures on its first major surface. On the contrary, a binder coating 12 is applied to the first major surface of Law, et al.'s backing 11 as depicted in Fig. 1. There is no suggestion in Law, et al. of including non-abrasive raised areas utilized for supporting an abrasive coating at least over the raised areas. Law, et al.'s Fig. 9 shows a polymer sheet with flattened distal ends 17 projecting downward from backing 11. There is no suggestion in Law, et al. of including non-abrasive raised areas on the opposite surface of the backing 11. While Law, et al. suggest that the "backing may be smooth, textured or perforated" (col. 9, line 52), there is no suggestion of including raised non-abrasive areas on the side which will receive the abrasive coating. It is only with hindsight reasoning that the Examiner is making the combination of Romero and Law, et al. Thus, the combination is inappropriate since it is made through the utilization of applicants' claims to find the various parts of the elements of the claim in each of these references. One skilled in the art would not make this combination because there is no incentive in either of the references for suggesting the combination that the Examiner has proposed. Law, et al. describe placing a make coat precursor directly on a hooking stem substrate (Fig. 9), which generally comprises a substrate having a flat front and stem-bearing back surface. The make coat precursor is applied to the front surface of the substrate, while the

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hooking stems protrude from the back surface. In this arrangement, the hooking stems can releasably engage with a loop fabric present on a support pad (see paragraph bridging columns 11 and 12). No suggestion is made of utilizing a backing with non-abrasive raised areas and depressed areas over the first major surface of the backing. On the contrary, the only backings that are disclosed in Law, et al. are conventional sheet-like backings having a smooth, flat or textured surface on the side opposite of where the hooking stems are formed. For a combination of references to be appropriate, there must be some incentive in one or both of the references to make the combination suggested by the Office Action. It is submitted that the Office Action is utilizing hindsight reasoning for locating the individual elements in Applicants' claims in each of the references and by use of Applicants' claims as a road map, thereby making the combination suggested in the Office Action. Such utilization of hindsight reasoning in making this combination of references is inappropriate.

The further rejection of claims 4 and 11 under 35 USC § 103(a) as being unpatentable over Romero in view of DeVoe, et al. is, likewise, inappropriate. Although DeVoe, et al. disclose, in Fig. 2, stems with the rounded distal ends, there is no suggestion in DeVoe, et al. of utilizing a backing that has non-abrasive raised areas and depressed areas on the opposite side of where the hooking stems are located. The only backings disclosed by DeVoe, et al. have a flat surface opposite the surface bearing the stems 203 (see Fig. 2).

It is submitted that the combination of references is inappropriate because it is based upon hindsight reasoning since there is no suggestion in any of the cited references of making the proposed combination which the Office Action has made. It is respectfully submitted that the rejection be withdrawn and a notice of allowance be issued for the pending claims.

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It is believed that no fee is due; however, in the event a fee is required, please charge the fee to Deposit Account No. 13-3723.

Respectfully submitted,

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Date

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